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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/529,842

03/31/2005

Frederic Noelle

CAB-38032

5410

116 7590 09/21/2009  
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EXAMINER

HUDA, SAEED M

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

09/21/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/529,842	<b>Applicant(s)</b> NOELLE, FREDERIC	
	<b>Examiner</b> SAEED M. HUDA	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 1-3 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Affidavit***

1. Applicant includes an affidavit that is directed to two tests (one that corresponds to the installation of the application and a comparative test). Both tests are commentary on the processed filaments and are thus non-commensurate with the scope of the apparatus claims presented.

### ***Response to Amendment***

2. The response filed on 07/01/2009 has been fully considered and entered into the record. Claims 1-3 are withdrawn. New claims 14-16 have been entered. The rejection for claims 4-13 is withdrawn due to appropriate correction by applicant.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 4-13 have been considered but are moot in view of the new ground(s) of rejection, to the extent that the arguments are applicable to the new grounds of rejection; they are addressed below.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 14-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what applicant intended by the phrase "wherein the tensile strength in the length direction and tensile strength in the breadth

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direction are greater than the corresponding tensile strengths provided by an identical consolidation of an identical mat on the first conveyor”.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4-12 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vuillaume et al. (US 2002/0168910 A1) in view of Noelle (US 5768756).

a. Regarding claims 4-5 and 10-11, Vuillaume et al. teach a method and apparatus for producing a complex non-woven fabric where the fabric is placed on a conveyor utilizing a spun-bonding tower (production unit 1) (figure 1 and abstract). Vuillaume et al. state that a filaments are received onto a first conveyor (mobile conveyor belt 3) is used (abstract and figures). The first conveyor causes the filaments pass onto a first movable conveying element (conveyor 10) for supporting the mat during consolidation where the mat is free of consolidation, and consolidation means (water jets 13) for consolidating the mat supported on the first movable conveying element by entanglement (hydro-entanglement consolidation) (abstract and figures). Vuillaume et al. teach that the first conveyor and the first movable conveying element each include an elongate generally flat run along with the mat is conveyed and supported.

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Vuillaume et al. fail to teach that a transfer means/second movable conveying element present or that said element uses a vacuum to maintain the mat on the outer surface of the second movable conveying element.

Noelle teaches a process and apparatus for the manufacture of non-woven unpatterned cloth (abstract) where said cloth is consolidated (column 2, lines 1-10). Noelle goes on to disclose that a mat of filaments (base cloth) is placed on a first conveyor (conveyor belt 1) (column 3, lines 65-67 and figure 1). In addition, there is a means for causing the mat of filaments to pass from the first conveyor (figure 1) where said means is a second movable conveying element (drum 20) which has a vacuum source connected to it in such a manner to form a vacuum suction box (figure 1 and column 4, lines 1-5) which maintains the mat on the outer surface of the second movable conveying element. It would have been obvious to one having ordinary skill in the art at the time of the invention to use the second movable conveying element of Noelle in the invention of Guillaume et al. because the second movable conveying element helps to ensure progressive compression of the cloth and the vacuum will ensure that the cloth is properly transferred from the first conveyor to the first movable element (column 4, lines 17-24).

b. Regarding claim 6, Guillaume et al. teach that consolidation means include fluid impingement of the mat (see rejection for claim 4 above). Also, it has been established that the second movable element is air permeable. There is no explicit disclosure that the first movable element is highly air permeable, thus it

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can be established that the air permeability of the first movable element is less.

Vuillaume et al. teach that the mat supported on the first movable conveying element is consolidated by entanglement (hydro-entanglement consolidation) (see rejection of claim 4). Thus, filament entanglement will be enhanced.

Vuillaume et al. in view of Noelle teaches that the process of the invention improves the mechanical properties (i.e. tensile strength) of the obtained cloth by thirty percent or more (Noelle column 5, lines 65-67). Thus, the ratio of the tensile strength in both directions would be preserved throughout the process apparatus.

c. Regarding claims 7-8, Vuillaume et al. in view of Noelle fail to teach the claimed air permeability. The air permeability of the conveyor determines the degree of air that can pass through the fabric and the amount of suction that can be applied the fabric (Vuillaume et al. [0036]). Therefore this is a result effective variable. Consequently, it would have been obvious to one having ordinary skill in the art at the time of the invention to have conducted routine experimentation to determine the optimum air permeability of the conveyor in order to obtain the desired degree of air that can pass through the fabric and the amount of suction that can be applied the fabric.

d. Regarding claim 9, Vuillaume et al. teaches that the belt is porous ([0036]). The modified invention of Vuillaume et al. fails to explicitly teach that the components have the claimed number of layers. The number of belts will affect the amount of air permeability and therefore amount of suction the fabric

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will see through the belt, as stated above. Therefore this is a result effective variable. Consequently, it would have been obvious to one having ordinary skill in the art at the time of the invention to have conducted routine experimentation to determine the optimum number of layers for each belt in order to obtain the desired degree of air permeability. Additionally, the first conveyor does not require much suction in that no activity is being performed on the cloth at this stage, thus a multilayer cloth would be acceptable. It would then, be logical, to have a more air permeable first movable element in that the fabric is being consolidated and would need additional suction to maintain the fabric on the belt (i.e. use of a single layer cloth would be appropriate here).

e. Regarding claim 12 and 14-15, the above rejections teach some of the claimed subject matter found in these claims. The subject matter related to the tensile strength of the filaments is merely intended use with relation to the apparatus claims. In an apparatus claim, only the claimed subject matter related to the structural features of the apparatus must be addressed. In this case, the tensile strength does not impart a structural feature to the apparatus.

8. Claims 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vuillaume et al. (US 2002/0168910 A1) in view of Noelle (US 5768756) as applied to claim 4 and 15 above, and further in view of Porte (US 3853651).

The conveyor of Vuillaume et al. in view of Noelle operates at a conveying speed to convey the filaments to the movable conveying element (figures). Vuillaume et al. in view of Noelle fail to explicitly teach that the linear speed of the second conveying

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element is less than said conveyor linear speed. Porte teach that in an apparatus for manufacturing spun bonded non-woven fabrics (abstract), the speed of the conveyer controls the desired thickness and width of the nonwoven fabric, and also determines the regularity or homogeneous nature of the fabric (column 1, lines 8-25). Therefore this is a result effective variable. Consequently, it would have been obvious to one having ordinary skill in the art at the time of the invention to have conducted routine experimentation to determine the optimum conveyer speed in order to obtain a desired determines the regularity or homogeneous nature of the fabric.

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to SAEED M. HUDA whose telephone number is (571)270-5514. The examiner can normally be reached on 8:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KHANH NGUYEN/  
Primary Examiner, Art Unit 1791

/SAEED M. HUDA/  
Examiner, Art Unit 1791